



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/554,029

10/20/2005

Kwang-Jae Lee

3427-05US01

7847

24113 7590 07/09/2008  
PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.  
4800 IDS CENTER  
80 SOUTH 8TH STREET  
MINNEAPOLIS, MN 55402-2100

EXAMINER

MILLER, BENA B

ART UNIT

PAPER NUMBER

3725

NOTIFICATION DATE

DELIVERY MODE

07/09/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

<b>Office Action Summary</b>	<b>Application No.</b> 10/554,029	<b>Applicant(s)</b> LEE, KWANG-JAE	
	<b>Examiner</b> Bena Miller	<b>Art Unit</b> 3725	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3/1, 3/2/1, 5, 6, and 9 is/are rejected.
- 7) ☒ Claim(s) 2, 4/1, 4/2/1 and 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/20/05</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3/1 or 3/2 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 3/1, the claim recites a "third connector". However, claim 1 does not recite a first or second connector. It is not clear not whether the nozzle includes a third connector since the claim 1, in which the claim depends does not recite a first or second connector.

Regarding claim 3/2, it is not clear if the "third connector" recited in the claim is the same as the "third connector" recited in line 16 of claim 2.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3/1 and 8/1 are rejected under 35 U.S.C. 102(b) as being anticipated by either of Hogg (US Patent 3,482,786) or Friedman et al (US Patent 3,184,169).

The device of either of Hogg or Friedman et al meets the limitations of the claimed invention including a nozzle unit (combination of 12, 10 and 15; or combination

Art Unit: 3725

of 11, 13, 16, 17, 43 and 44 , respectively) including a feed line (14 or 54) and a hollow pipe line (12 or 48, respectively) for surrounding the feed line and radially spaced from an outer surface of the feed line, the feed line having one end into which air of high pressure and very low temperature flows and the other end at which a nozzle is provided (the figure and fig. 1; it should be noted that the device of Hogg or Friedman et al will include low temperature flows depending on the temperature of the compressed air or other gas that is used to mix with the particles); a mulling unit connected to the nozzle at one end thereof, the mulling unit including a mulling head spaced from the nozzle on the same axis as the nozzle therein and a downwardly tapered, opened outlet (combination of 11, 10 and 15 or combination of 44 and 17) ; and an input device connected to the feed line at the middle of the nozzle unit, the input device including a hopper and a feeder supplying a material to be processed (13 and 24-27 or 19).

Regarding claim 3/1, Hogg or Friedman et al further teaches a T-shaped hollow body and L-shaped flow path as seen in the figure or figure 1, respectively. It should be noted the examiner considers the feature, a third connector, to be inherent in the device of the either of Hogg or Friedman et al.

Regarding claim 8/1, Hogg or Friedman et al further teaches a material separator connected to the outlet milling unit by a pipe line (18 via 16 or 23 via 32 and 61, respectively) and at least one separator (21 or 24, respectively).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 3725

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 5, 6 and 8/5/1 are rejected under 35 U.S.C. 103(a) as being unpatentable over either of Hogg or Friedman et al.

The device of either of Hogg or Friedman et al teaches most of the elements of including gradually reduced nozzles and a material separator connected to the outlet milling unit by a pipe line (18 via 16 or 23 via 32 and 61, respectively) and at least one separator (21 or 24, respectively). Hogg or Friedman et al fails to teach additional nozzle units. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate additional nozzle units, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over either of Hogg or Friedman et al in view Davis (US Patent 4,222,527).

The device of either of Hogg or Friedman et al teaches most of the elements except for refrigerant. Davis solves this problem by disclosing a similar apparatus in which refrigerant is used in a milling device for purpose of cooling the material below its embrittlement temperature. It would have been obvious to one of ordinary skill in the art to incorporate refrigerant as suggested by Davis in the device of either of Hogg or Friedman et al for the reasons set forth above.

***Allowable Subject Matter***

Claims 2, 4/1, 4/2/1 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 3/2/1 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bena Miller whose telephone number is 571.272.4427. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on 571-272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bena Miller/  
Primary Examiner, Art Unit 3725  
July 2, 2008